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FIT Clinical Decision Making

AORTIC REGURGITATION: A CHALLENGING POST-PROCEDURE DIAGNOSIS IN AORTIC VALVE INTERVENTION

Poster Contributions
Hall C
Monday, March 31, 2014, 9:45 a.m.-10:30 a.m.

Session Title: FIT Clinical Decision Making: Valvular and Pericardial Disease
Abstract Category: Valvular Heart Disease
Presentation Number: 1246-13

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Background: Severe aortic regurgitation (AR) is a potentially fatal complication of balloon aortic valvuloplasty (BAV).

Case: A 68-year-old man presented for further management of severe aortic stenosis. He was deemed inoperable due to multiple comorbidities, and underwent evaluation for transcatheter aortic valve replacement (TAVR). During his evaluation, he presented with an acute deterioration including hypotension, acute on chronic renal failure and new decline in his left ventricular systolic function (LVEF 30-35%). BAV was performed as a bridge to TAVR utilizing a single inflation of a 20mm balloon, with reduction in the mean aortic gradient from 30mmHg (Figure A) to 12mmHg. This was accompanied by hypotension. Emergent transthoracic echo demonstrated a dense diastolic signal on continuous wave (CW) Doppler (Figure B), but there was no obvious regurgitation on Color Doppler (Figure C). Transesophageal echo showed a torn right coronary cusp (Figure D) with torrential aortic regurgitation. The patient rapidly deteriorated with ensuing shock, ventricular fibrillation and subsequently expired.

Conclusion: Color Doppler can underestimate the severity of acute severe AR due to reductions in driving pressure gradients. CW Doppler provides important clues with dense signals and steep slopes resulting from rapid diastolic pressure equalization.